

Claims

1. A compressed air supply system for a compressed air
breathing apparatus with a pressure reducer connected to
5 the compressed air bottle and pressure lines connected to
the high-pressure and medium-pressure outputs of said
pressure reducer and to a lung machine and other alarm and
measuring devices and other devices, characterized in that
it comprises a combined single-piece high/medium-pressure
10 line (8) consisting of a medium-pressure hose (18)
containing respiratory air and having a cross section in
accordance with the need for respiratory air, and a coaxial
flexible high-pressure line (19) located inside said
medium-pressure hose that is connected via a rotary
15 coupling (7) to the pressure reducer (5) and a manifold
block (9) for the supplied high and medium-pressure air
located at the wearer's front so that it can rotate in
axial direction.
- 20 2. The compressed air supply system according to claim 1,
characterized in that the manifold block (9) comprises a
first medium-pressure connection (10) for the lung machine
(11), a high-pressure connection (15') for a pressure gauge
(15), a combined high/medium-pressure connection (16) for
25 controlling an alarm whistle (17) at high pressure and for
operating it at medium pressure, a high-pressure fast-fill
connection (14), and a second medium-pressure connection
(13).
- 30 3. The compressed air supply system according to claims 1 or
2, characterized in that the flexible medium-pressure hose
(18) consists of an elastomer and the flexible high-
pressure line (19) consists of a spirally wound pipe made
of a high-strength material.

4. The compressed air supply system according to claim 3, characterized in that the high-pressure line (19) consists of a copper alloy or a compression-resistant synthetic material.

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5. The compressed air supply system according to claim 1, characterized

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- in that the manifold body (6) of the pressure reducer (5) and the manifold block (7) form a first bearing cylinder (20) with a radially entering medium-pressure duct (21) and a second bearing cylinder (22) with an axially entering high-pressure duct (23) following the first in axial direction,

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- in that the rotary coupling (7) consists of a medium-pressure connecting nozzle (24, 24') and a high-pressure connecting nozzle (32, 32') held inside said medium-pressure nozzle and sealed against it, and

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- in that the medium-pressure connecting nozzle (24, 24') is pivoted in the first bearing cylinder (20) and the high-pressure connecting nozzle (32, 32') is sealed and pivoted in the second bearing cylinder (22), wherein

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- the medium-pressure connecting nozzle (24) comprises a reduced diameter section (27) with a through hole (28, 28') for supplying medium-pressure air at the level of the medium-pressure duct (21), and

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- the high-pressure connecting nozzle (32) has a central hole (33, 33') to receive the high-pressure line (19) for supplying high-pressure air.

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6. The compressed air supply system according to claim 5, characterized in that the high-pressure connecting nozzle

(32) is pivotably held in the medium-pressure connecting nozzle (24), in that one O-ring (30, 31) each is located inside that nozzle and in the second bearing cylinder und (22), and in that the reduced diameter section is designed as an annular groove (27) with O-rings (26) on top and underneath.

7. The compressed air supply system according to claim 5, characterized in that the high-pressure connecting nozzle (32') is firmly linked with the medium-pressure connecting nozzle (24') and in that one O-ring (30', 28') each is placed in the section of the second bearing cylinder (22) as well as below the reduced diameter section (27') of the medium-pressure connecting nozzle (24').

8. The compressed air supply system according to any one of claims 5 through 7, characterized in that the high-pressure line (19) is fastened in an axial hole of the high-pressure connecting nozzle (32, 32').

9. The compressed air supply system according to any one of claims 5 through 8, characterized in that the medium-pressure hose (18) is attached to the portion of the medium-pressure connecting nozzle (24, 24') that protrudes from the first bearing cylinder (20) using a press sleeve (29).

10. The compressed air supply system according to any one of claims 5 through 9, characterized in that the medium-pressure connecting nozzle (24, 24') is held in the manifold body (6) or the manifold block (9), respectively, by a linch pin (25).

11. The compressed air supply system according to any one of claims 5 through 10, characterized in that the pressure of the high-pressure air is in the range of

about 200 to 300 bars and that the pressure of the medium-pressure air is in the range of about 4 to 10 bars.